

IN THE CLAIMS:

1. (Currently Amended) An apparatus for processing a semiconductor, which comprises

an airtight processing chamber separated from the air,

a wafer stage installed in the chamber, and

a wafer sensor module equipped with sensor probes, each sensor probe capable of detecting at least one of electric current passing through an article to be processed, voltage and temperature, said wafer sensor module positioned on the stage in exchange of the article to be processed after carried into the processing chamber by a transporting means for the article to be processed.

2. (Original) An apparatus according to claim 1, wherein measured values detected by the sensor probes are converted to optical signals, which are led out from the processing chamber to the outside.

3. (Original) An apparatus according to claim 2, wherein the optical signals are received by a means for receiving optical signals equipped on the stage.

4. (Original) An apparatus according to claim 1, wherein the stage has a means for applying an optional voltage to at least one point of the wafer sensor module.

5. (Original) An apparatus according to claim 3, wherein the means for receiving optical signals processes at least two optical signals caused by measured values in common and leads to outside of the semiconductor processing apparatus.

6. (Currently Amended) A wafer sensor module comprising a silicon substrate as a main body, and at least one sensor probe and a luminescent device formed on the main body, said wafer sensor module being positioned on a wafer stage in an apparatus for processing a semiconductor in exchange of a wafer to be processed.

7. (Original) A wafer sensor module according to claim 6, wherein the silicon substrate as a main body has almost the same shape as a semiconductor wafer to be processed.

8. (New) An apparatus according to claim 1, wherein the wafer sensor module as a main body has almost the same shape as a semiconductor wafer to be processed.

9. (New) A wafer sensor module according to claim 6, wherein measured values detected by the at least one sensor probe are converted to optical signals to be optically led out from the apparatus to the outside.

10. (New) A wafer sensor module according to claim 9, wherein the optical signals are received by a means for receiving optical signals equipped on the stage.

11. (New) A wafer sensor module according to claim 6, wherein the wafer stage has a means for applying an optional voltage to at least one point of the wafer sensor module.

12. (New) A wafer sensor module according to claim 10, wherein the means for receiving optical signals processes at least two optical signals caused by measured values in common and leads to outside of the apparatus.

13. (New) An apparatus for processing a semiconductor, which comprises
an airtight processing chamber,
a wafer stage installed in the chamber, and
a wafer sensor module equipped with sensor probes, each sensor probe capable of detecting at least one of electric current passing through an article to be processed, voltage and temperature, and equipped with at least one optical signal communication device to optically communicate sensor probe data off said wafer sensor module, said wafer sensor module positionable on the stage in exchange of the article to be processed.

14. (New) An apparatus according to claim 13, wherein optical said sensor probe data communicated off said wafer sensor module is optically led to an outside of the processing chamber.

15. (New) An apparatus according to claim 14, wherein optical said sensor probe data is optically received by an optical receiver provided on at least one of the stage and a wall of the processing chamber.

16. (New) An apparatus according to claim 13, wherein the stage has a means for applying an optional voltage to at least one point of the wafer sensor module.

17. (New) An apparatus according to claim 15, wherein the optical receiver processes at least two optical signals caused by measured values in common and leads the same to an outside of the processing chamber.

18. (New) An apparatus according to claim 13, wherein the wafer sensor module as a main body has almost the same shape as a semiconductor wafer to be processed.